

Chain of Thought Prompting Elicits Reasoning in Large Language Models

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Abstract

We explore how generating a chain of thought -- a series of intermediate reasoning steps -- significantly improves the ability of large language models to perform complex reasoning. In particular, we show how such reasoning abilities emerge naturally in sufficiently large language models via a simple method called chain of thought prompting, where a few chain of thought demonstrations are provided as exemplars in prompting. Experiments on three large language models show that chain of thought prompting improves performance on a range of arithmetic, commonsense, and symbolic reasoning tasks. The empirical gains can be striking. For instance, prompting a 540B-parameter language model with just eight chain of thought exemplars achieves state of the art accuracy on the GSM8K benchmark of math word problems, surpassing even finetuned GPT-3 with a verifier.